IN THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the Application:

LISTING OF CLAIMS:

1. (Currently Amended) A method for discovering and configuring network devices into a cluster, the method comprising:

automatically detecting, by a commander network device, candidate devices by receiving discovery packets from the candidate devices, the candidate devices periodically transmitting the discovery packets and the commander network device being user-configured as the point of access for the devices of the cluster;

determining whether any of the candidate devices is qualified to join the cluster by applying qualification rules to the discovery packets received from the candidate devices; and

presenting to a user a list of the candidate network devices that are qualified to join the cluster.

Claims 2-57 (Cancelled).

58. (Previously Presented) The method according to claim 1, wherein the candidate network devices transmit the discovery packets to a multicast address.

59. (Previously Presented) The method according to claim 1, wherein the discovery packets comprise Layer 2 messages.

60. (Previously Presented) The method according to claim 59, wherein the discovery packets comprise Media Access Control (MAC) Layer messages.

61. (Previously Presented) The method according to claim 1, wherein the discovery packets include cluster-capability information of the candidate device transmitting the discovery packets.

62. (Previously Presented) The method according to claim 1, wherein the qualification includes that the candidate device is not an active member of another cluster.

63. (Previously Presented) The method according to claim 1, further comprising:

maintaining, at each of the candidate devices, a database containing information about neighbor candidate devices.

64. (Previously Presented) The method according to claim 63, further comprising:

transmitting, in response to the adding, the information about the neighbor candidate information to the commander network device from each member network device which just joined the cluster.

65. (Previously Presented) The method according to claim 1, further comprising:

prior to the adding, presenting to a user a list of the candidate network devices qualified to join the cluster.

66. (Currently Amended) A method for discovering candidate network devices to be configured into a cluster of network devices and managed via a commander network device, the method comprising:

automatically detecting, at the commander network device, first candidate network devices by receiving discovery packets from the candidate network

devices directly connected to the commander network device, the candidate network devices periodically transmitting the discovery packets, the discovery packets including information indicating that the candidate network device is ~~cluster-capable~~ configured to operate as part of the cluster of network devices and the commander network device being user-configured as the point of access for the devices of the cluster;

determining whether any of the first candidate network devices is qualified to join the cluster by applying qualification rules to the discovery packets; and

presenting to a user a list of the first candidate network devices qualified to join the cluster.

67. (Previously Presented) The method in accordance with claim 66, wherein the discovery packets comprise Layer 2 messages.

68. (Previously Presented) The method according to claim 66, wherein the qualification includes that the candidate device is not an active member of another cluster.

69. (Previously Presented) The method in accordance with claim 66, further comprising:

storing the information received from the candidate network devices in a database of the commander network device.

70. (Previously Presented) The method in accordance with claim 66, further comprising:

maintaining, at each of the candidate network devices, a neighbor device database containing information about other candidate network devices directly connected to the candidate network device.

71. (Previously Presented) The method in accordance with claim 70, further comprising:

updating, at each of the candidate network devices, the neighbor device database in response to the discovery packets received from the other candidate network devices.

72. (Previously Presented) The method in accordance with claim 70, further comprising:

adding one or more of the first candidate network devices to the cluster, each of the added first candidate devices becoming a member of the cluster.

73. (Previously Presented) The method in accordance with claim 72, further comprising:

transmitting, in response to the adding, the neighbor device database information to the commander network device from member network device which just joined the cluster.

74. (Previously Presented) The method in accordance with claim 73, wherein the neighbor device database information is transmitted using user datagram protocol (UDP) packets.

75. (Previously Presented) The method in accordance with claim 73, further comprising:

automatically detecting, at the commander network device, second candidate network devices connected to the member network device which just joined the cluster, by receiving the neighbor device database information from the member network device.

76. (Previously Presented) The method in accordance with claim 75, further comprising:

storing the received neighbor device database information in a database of the commander network device.

77. (Previously Presented) The method in accordance with claim 75, further comprising:

presenting to a user a list of the first and second candidate network devices qualified to join the cluster.

78. (Currently Amended) A method for discovering candidate network devices to be configured into a cluster of network devices and managed via a commander network device, the method comprising:

periodically transmitting discovery packets from the candidate network devices to a commander network device, the commander network device being user-configured as the point of access for the devices of the cluster, the discovery packets including information indicating that the candidate network device is ~~cluster-capable~~ configured to operate as part of the cluster of network devices;

maintaining, at each of the candidate network devices, a neighbor device database containing information about other candidate network devices directly connected to the candidate network device; and

transmitting the information in the neighbor device database to the commander network device when the candidate network device is added to the cluster, all communication with network devices in the cluster being through a single network address assigned to the commander network device.

79. (Previously Presented) The method in accordance with claim 78, further comprising:

receiving, at each of the candidate network devices, the discovery packets from its neighbor candidate devices; and

updating, at each of the candidate network devices, the neighbor device database in response to the received discovery packets.

80. (Previously Presented) The method in accordance with claim 78, wherein the discovery packets comprise Layer 2 messages.

81. (Currently Amended) A commander network device for discovering and configuring network devices into a cluster, the commander network device comprising:

discovery protocol logic to automatically detect candidate devices by receiving discovery packets from the candidate devices, the candidate devices periodically transmitting the discovery packets and the commander network device being user-configured as the point of access for the devices of the cluster; and

qualification rule circuitry to determine whether any of the candidate devices is qualified to join the cluster by applying qualification rules to the discovery packets received from the candidate devices, the device further configured to present to a user a list of the candidate network devices that are qualified to join the cluster.

82. (Previously Presented) The commander network device according to claim 81, wherein the discovery packets comprise Layer 2 messages.

83. (Previously Presented) The commander network device according to claim 82, wherein the discovery packets comprise Media Access Control (MAC) Layer messages.

84. (Previously Presented) The commander network device according to claim 81, wherein the discovery packets include cluster-capability information of the candidate device transmitting the discovery packets.

85. (Previously Presented) The commander network device according to claim 81, wherein the qualification includes that the candidate device is not an active member of another cluster.

86. (Previously Presented) The commander network device according to claim 81, wherein the discovery protocol logic is further to receive information about neighbor candidate network devices transmitted from a member network device which just joined the cluster, each of the candidate network devices and member network devices maintaining database containing information about their neighbor candidate devices.

87. (Previously Presented) The commander network device according to claim 81, further comprising:

logic to generate a list of the candidate network devices qualified to join the cluster.

88. (Currently Amended) A commander network device for discovering candidate network devices to be configured into a cluster, the commander network device comprising:

discovery protocol logic to automatically detect first candidate network devices by receiving the discovery packets from the candidate network devices directly connected to the commander network device, each of the candidate network devices periodically transmitting discovery packets including information indicating that the candidate network device is ~~cluster-capable of belonging to a cluster~~ configured to operate as part of a cluster and the commander network device being user-configured as the point of access for the devices of the cluster;

qualification rule circuitry to determine whether any of the first candidate network devices is qualified to join the cluster by applying qualification rules to the discovery packets; and

logic to present to a user a list of the first candidate network devices qualified to join the cluster.

89. (Previously Presented) The commander network device in accordance with claim 88, wherein the discovery packets comprise Layer 2 messages.

90. (Previously Presented) The commander network device according to claim 88, wherein the qualification includes that the candidate device is not an active member of another cluster.

91. (Previously Presented) The commander network device in accordance with claim 88, further comprising:

a database to store the information received from the candidate network devices.

92. (Previously Presented) The commander network device in accordance with claim 88, further comprising:

cluster management logic to add one or more of the first candidate network devices to the cluster, the added first candidate device becoming a member of the cluster.

93. (Previously Presented) The commander network device in accordance with claim 88, wherein each of the candidate network devices maintains a neighbor device database containing information about other candidate network devices directly connected to the candidate network device, and wherein the discovery protocol logic is further to receive information about neighbor candidate network devices from a member network device which just joined the cluster.

94. (Previously Presented) The commander network device in accordance with claim 93, wherein the discovery protocol logic is further to automatically detect second candidate network devices connected to the member network device which just joined the cluster, in response to the received information about the neighbor candidate network devices.

95. (Previously Presented) The commander network device in accordance with claim 94, wherein the logic to generate the list further generates a list of the first and second candidate network devices qualified to join the cluster.

96. (Currently Amended) A network device capable of being configured into a cluster of network devices and managed via a commander network device, the network device comprising:

discovery protocol logic to periodically transmit discovery packets to a commander network device, the commander network device being user-configured as the point of access for the devices of the cluster, the discovery packets including information indicating that the network device is ~~cluster-capable of belonging to a cluster~~ configured to operate as part of the cluster of network devices;

periodically transmitting discovery packets from the candidate network devices, the discovery packets including information indicating that the candidate network device is ~~cluster-capable~~ configured to operate as part of the cluster of network devices;

a neighbor device database to store information about other candidate network devices directly connected to the network device, other candidate network devices being ~~cluster-capable of configured into a cluster~~ configured to operate as part of the cluster of network devices; and

logic to transmit the information in the neighbor device database to the commander network device when the network device is added to the cluster, the

network device configured to communicate through a single network address assigned to the commander network device.

97. (Previously Presented) The network device in accordance with claim 96, wherein the discovery protocol logic further to receive the discovery packets from its neighbor candidate devices, the network device further comprising:
logic to updating the neighbor device database in response to the received discovery packets.

98. (Previously Presented) The network device in accordance with claim 96, wherein the discovery packets comprise Layer 2 messages.

99. (Currently Amended) ~~An apparatus~~ A commander network device for discovering and configuring network devices into a cluster, the ~~apparatus~~ commander network device comprising:

means for automatically detecting candidate devices by receiving discovery packets from the candidate devices, the candidate devices periodically transmitting the discovery packets, the commander network device being user-configured as the point of access for the devices of the cluster;

means for determining whether any of the candidate devices is qualified to join the cluster by applying qualification rules to the discovery packets received from the candidate devices; and

means for presenting to a user a list of the candidate network devices that are qualified to join the cluster.

100. (Previously Presented) The apparatus according to claim 99, wherein the candidate network devices transmit the discovery packets to a multicast address.

101. (Previously Presented) The apparatus according to claim 99, wherein the discovery packets comprise Layer 2 messages.

102. (Previously Presented) The apparatus according to claim 101 , wherein the discovery packets comprise Media Access Control (MAC) Layer messages.

103. (Previously Presented) The apparatus according to claim 99, wherein the discovery packets include cluster-capability information of the candidate device transmitting the discovery packets.

104. (Previously Presented) The apparatus according to claim 99, wherein the qualification includes that the candidate device is not an active member of another cluster.

105. (Previously Presented) The apparatus according to claim 99, further comprising:
means for maintaining, at each of the candidate devices, a database containing information about neighbor candidate devices.

106. (Previously Presented) The apparatus according to claim 105, further comprising:
means for transmitting, in response to the addition of a member, the information about the neighbor candidate information to the commander network device from each member network device which just joined the cluster.

107. (Previously Presented) The apparatus according to claim 99, further comprising:
means for prior to the addition, presenting to a user a list of the candidate network devices qualified to join the cluster.

108. (Currently Amended) ~~An apparatus~~ A commander network device for discovering candidate network devices to be configured into a cluster of network

devices and managed via a commander network device, the ~~apparatus~~ commander network device comprising:

means for automatically detecting first candidate network devices by receiving discovery packets from the candidate network devices directly connected to the commander network device, the candidate network devices periodically transmitting the discovery packets, the discovery packets including information indicating that the candidate network device is ~~cluster-capable of belonging to a cluster~~ configured to operate as part of the cluster of network devices, the commander network device being user-configured as the point of access for the devices of the cluster;

means for determining whether any of the first candidate network devices is qualified to join the cluster by applying qualification rules to the discovery packets; and

means for presenting to a user a list of the first candidate network devices qualified to join the cluster.

109. (Previously Presented) The apparatus in accordance with claim 108, wherein the discovery packets comprise Layer 2 messages.

110. (Previously Presented) he apparatus according to claim 108, wherein the qualification includes that the candidate device is not an active member of another cluster.

111. (Previously Presented) The apparatus in accordance with claim 108, further comprising:
means for storing the information received from the candidate network devices in a database of the commander network device.

112. (Previously Presented) The apparatus in accordance with claim 108, further comprising:

means for adding one or more of the first candidate network devices to the cluster, the added first candidate device becoming a member of the cluster.

113. (Previously Presented) The apparatus in accordance with claim 112, wherein each of the candidate network devices maintains a neighbor device database containing information about other candidate network devices directly connected to the candidate network device, and each of the member network devices which just joined the cluster transmits the neighbor device database information to the commander network device.

114. (Previously Presented) The apparatus in accordance with claim 113, wherein the neighbor device database information is transmitted using user datagram protocol (UDP) packets.

115. (Previously Presented) The apparatus in accordance with claim 113, further comprising:
means for automatically detecting second candidate network devices connected to the member network device which just joined the cluster, by receiving the neighbor device database information from the member network device.

116. (Previously Presented) The apparatus in accordance with claim 115, further comprising:

means for storing the received neighbor device database information in a database of the commander network device.

117. (Previously Presented) The apparatus in accordance with claim 115, further comprising:

means for presenting to a user a list of the first and second candidate network devices qualified to join the cluster.

118. (Currently Amended) An apparatus for discovering candidate network devices to be configured into a cluster of network devices and managed via a commander network device, the apparatus comprising:

means for periodically transmitting discovery packets from the candidate network devices to a commander network device, the commander network device being user-configured as the point of access for the devices of the cluster, the discovery packets including information indicating that the candidate network device is ~~cluster-capable~~ configured to operate as part of the cluster of network devices;

means for maintaining, at each of the candidate network devices, a neighbor device database containing information about other candidate network devices directly connected to the candidate network device; and

means for transmitting the information in the neighbor device database to the commander network device when the candidate network device is added to the cluster.

119. (Previously Presented) The apparatus in accordance with claim 118, further comprising:

means for receiving, at each of the candidate network devices, the discovery packets from its neighbor candidate devices; and

means for updating, at each of the candidate network devices, the neighbor device database in response to the received discovery packets.

120. (Previously Presented) The apparatus in accordance with claim 118, wherein the discovery packets comprise Layer 2 messages.

121. (Currently Amended) A computer readable medium which stores instructions which are executable on a ~~computer~~ commander network device in which the instructions perform a method for discovering and configuring network devices into a cluster, the method comprising:

automatically detecting, by a commander network device, candidate devices by receiving discovery packets from the candidate devices, the candidate devices periodically transmitting the discovery packets and the commander network device being user-configured as the point of access for the devices of the cluster;

determining whether any of the candidate devices is qualified to join the cluster by applying qualification rules to the discovery packets received from the candidate devices; and

presenting to a user a list of the candidate network devices that are qualified to join the cluster.

122. (Currently Amended) A computer readable medium which stores instructions which are executable on a ~~computer~~ commander network device in which the instructions perform a method for discovering candidate network devices to be configured into a cluster of network devices and managed via ~~a~~ the commander network device, the method comprising:

automatically detecting, at the commander network device, first candidate network devices by receiving discovery packets from the candidate network devices directly connected to the commander network device, the candidate network devices periodically transmitting the discovery packets, the discovery packets including information indicating that the candidate network device is ~~cluster-capable~~ configured to operate as part of the cluster of network devices and the commander network device being user-configured as the point of access for the devices of the cluster;

determining whether any of the first candidate network devices is qualified to join the cluster by applying qualification rules to the discovery packets; and

presenting to a user a list of the first candidate network devices qualified to join the cluster.

123. (Previously Presented) The program storage device in accordance with claim 122, wherein the method further comprises:

adding one or more of the first candidate network devices to the cluster, each of the added first candidate devices becoming a member of the cluster.

124. (Previously Presented) The program storage device in accordance with claim 122, wherein the method further comprises:

storing the information received from the candidate network devices in a database of the commander network device.

125. (Currently Amended) A computer readable medium which stores instructions which are executable on a computer in which the instructions perform a method for discovering candidate network devices to be configured into a cluster of network devices and managed via a commander network device, the method comprising:

periodically transmitting discovery packets from the candidate network devices to a commander network device, the commander network device being user-configured as the point of access for the devices of the cluster, the discovery packets including information indicating that the candidate network device is ~~cluster-capable~~ configured to operate as part of the cluster of network devices;

maintaining, at each of the candidate network devices, a neighbor device database containing information about other candidate network devices directly connected to the candidate network device; and

transmitting the information in the neighbor device database to the commander network device when the candidate network device is added to the cluster, all communication with network devices in the cluster being through a single network address assigned to the commander network device.

126. (Previously Presented) The program storage device in accordance with claim 125, wherein the method further comprises:

receiving, at each of the candidate network devices, the discovery packets from its neighbor candidate devices; and

updating, at each of the candidate network devices, the neighbor device database in response to the received discovery packets.

127. (Previously Presented) The method of Claim 1 wherein all communication with network devices in the cluster is through a single network address assigned to the commander network device.

128. (Previously Presented) The device of Claim 81 wherein all communication with network devices in the cluster is through a single network address assigned to the device.

129. (Previously Presented) The apparatus of Claim 99 wherein all communication with network devices in the cluster is through a single network address assigned to the device.

130. (New) The method of claim 1, wherein automatically detecting candidate devices by receiving discovery packets from the candidate devices comprises automatically detecting candidate devices by receiving Cisco Discovery Protocol packets from the candidate devices.

131. (New) The method of claim 130, wherein determining whether any of the candidate devices is qualified to join the cluster by applying qualification rules to the discovery packets received from the candidate devices comprises determining whether any of the candidate devices is qualified to join the cluster by:

detecting the candidate device as being configured to operate as part of the cluster of network devices;

detecting the candidate as having Hypertext Transfer Protocol capabilities and having Cisco Discovery Protocol enabled;

detecting the candidate as being connected to a member of the existing cluster;

detecting a connection of the candidate as having Spanning Tree Protocol (STP) forwarding enabled; and

detecting the candidate as not being a member of any other cluster.